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Remarks

Applicant and the undersigned would like to thank the Examiner for Examiner's efforts in the examination of this application.

I. Specification

Examiner objected to abstract of the specification. Examiner's suggestion to amend the abstract by deleting the phrases "the present invention is directed" in line 1 and "the invention" in lines 5-6 has been noted. The abstract of the invention has been amended to reflect the changes suggested by the Examiner.

II. Rejection of claims 1 and 15 under 35 USC 112 2nd paragraph

The Examiner rejected claims 1 and 15 under 35 USC 2nd paragraph for lacking antecedent basis. Claims 1 and 15 have been amended to address the rejections.

III. Rejection of claims 1-4, 6, 7, 9-11, and 16-21 rejected under 35 USC

102(b)

Examiner has rejected claims 1-4, 6, 7, 9-11, and 16-21 under 35 USC 102(b) as being anticipated by Johnson (US 5,603,318).

Independent claims 1, 7, 16 and 21 have been amended to more clearly represent the claimed inventions.

Independent claim 1, as amended now recites: A surgical drain comprising: an elongated conduit configured to be implanted in and to drain fluid from a

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patient's body cavity comprising a drain lumen and at least one sensing element;
~~and a first sensing system configured to sense a physiological property of a~~
~~substance within the drain lumen. wherein the at least one sensing element is~~
configured to sense a biological property of a substance within the drain lumen.

This amendment does not present new matter and is supported in paragraphs 52, 63, and 64 of the present application.

Claim 1 of present invention specifically recites an elongated conduit having a drain lumen to drain fluid from a patient's body and a sensing element configured to sense a physiological property of a substance within the drain lumen. The sensing is performed within the lumen, and not in the outer area of the lumen. Johnson does not teach sensing a physical property of a substance within a drain lumen.

The above discussion with respect to claim 1 similarly applies to independent claims 7, 16 and 21 as amended. Therefore, independent claims 1, 7, 16 and 21 are allowable over Johnson.

The dependent claims 2-4, 6, 9-11, 13 and 17-20 are allowable for the same reasons as stated above with respect to independent claims 1, 7, 16 and 21.

IV. Rejection of claims 1-7, 9, 16-19, and 21-23 rejected under 35 USC

102(b)

Examiner rejected claims 1-7, 9, 16-19 and 21-23 under 35 USC 102(b) as being anticipated by Takezawa et al. (US 5,108,364).

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As discussed above, independent claim 1, as amended now recites: A surgical drain comprising: an elongated conduit configured to be implanted in and to drain fluid from a patient's body cavity comprising a drain lumen and at least one sensing element; ~~and a first sensing system configured to sense a physiological property of a substance within the drain lumen.~~ wherein the at least one sensing element is configured to sense a biological property of a substance within the drain lumen. This amendment does not present new matter and is supported in paragraphs 52, 63, and 64 of the present application.

Takezawa's device cannot sense a biochemical property of a substance within the drain lumen, as required by claim 1 of the present application. Takezawa discloses a diagnostic catheter to monitor the temperature and pressure inside a natural body cavity (not a surgical wound) such as the stomach. To enable long-term placement of this diagnostic catheter in the stomach, the catheter is equipped with a drainage tube to prevent the congestion of stomach secretions.

Takezawa teaches having a temperature sensor mounted to the tip of the catheter for measuring the temperature at a specific area of the body cavity (Column 4, Lines 3-7). In addition, in figure 1B of Takezawa Patent, the mounting location of the temperature sensor 10 is shown to be in the inner wall of the monitoring catheter and as also discussed in Column 4, Lines 3-7. In other words, Takezawa's device only measures the temperature of the tissue outside of the lumen directly (or body temperature) and does not sense the biochemical property of a substance within the lumen. Therefore, Takezawa's device cannot

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sense a biochemical property of a substance within the drain lumen, as required by claim 1 of the present application. In the present application it is important to sense biochemical properties within the elongated lumen while implanted in the body in order to detect physiological property deviations in different positions of the lumen. Based on the sensing detection at different positions in the lumen, physicians can tell if the tissue at different locations is or not healing as well as other locations.

Therefore, independent claim 1 is believed to be allowable over Takezawa et al.

Independent claims 7, 16 and 21 require the same features and elements of claim 1 and are allowable for the same reasons above.

Dependent claims 2-6, 9, 17-19, and 22-23 are allowable based on the above discussions with respect to their corresponding independent claims 1, 7, 16 and 21, above.

V. Rejection of claims 5 and 14 under 35 USC 103(a)

Examiner rejected claims 5 and 14 under 35 USC 103(a) over Johnson in view of Russo et al. (US 4,317,452).

While Russo teaches a body fluid drain device, Russo fails to remedy deficiencies of Johnson as required by independent claims 1 and 7 from which claims 5 and 15 depend, having at least one sensing element or a sensing system to sense a biochemical property of a substance within the drain lumen. Therefore, dependent claims 5 and 14 are allowable for the same reasons.

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VI. Rejection of claims 8 and 15 under 35 USC 103(a)

Examiner rejected claims 8 and 15 over Johnson in view of Yarger (US 5,360,414). Claim 7 namely requires a limitation of the transmitting element to deliver energy into the lumen and receiving system receiving energy from within the lumen. Yarger fails to remedy the deficiencies of Johnson as stated above with respect to transmitting and receiving energy into and from within the lumen of claim 7. Therefore, dependent claims 8 and 15 are allowable for the same reasons.

VII. Rejection of claim 12 under 35 USC 103(a)

Claim 12 has been rejected under 35 USC 103(a) over Johnson in view of Takezawa.

The combination of the Johnson and Takezawa patents fail to remedy the deficiencies of the required element of claim 7, namely the transmitting element to deliver energy into the lumen and receiving system receiving energy from within the lumen of claim 7.

Therefore, claim 12 is allowable in view of Johnson and Takezawa.

VIII. Rejection of claims 1, 3-8, 10-12, 13-19 and 21-23 under double patenting

Examiner provisionally rejected claims 1, 3-8, 10-12, 13-19, and 21-23 under obviousness-type double patenting. The above claims as amended should not be

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rendered obvious in view of the claims of the related co-pending applications cited in the office action.

IX. Conclusion

Applicant respectfully submits that the above amendments place this application in a condition for allowance, which Applicant respectfully solicits. The Applicant and the undersigned would like to again thank the examiner for his efforts in the examination of this application and for reconsideration of the claims as amended in light of the arguments presented. If the further prosecution of the application can be facilitated through interview between the Examiner and the undersigned, the Examiner is requested to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,
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